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**PATENT APPLICATION**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re application of

Docket No: Q64555

Toshihiko FUJISAKI

Appln. No.: 09/859,462

Group Art Unit: 2665

Confirmation No.: 3965

Examiner: DAVIS, Cynthia L.

Filed: May 18, 2001

For: ROUTER WITH PRECEDENCE CONTROL FUNCTION AND MACHINE-  
READABLE RECORDING MEDIUM RECORDING PROGRAMS

**SUBMISSION OF APPEAL BRIEF**

**MAIL STOP APPEAL BRIEF - PATENTS**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Submitted herewith please find an Appeal Brief. A check for the statutory fee of \$500.00 is attached. The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account. A duplicate copy of this paper is attached.

Respectfully submitted,

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WASHINGTON OFFICE

**23373**

CUSTOMER NUMBER

Date: March 30, 2006



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**APPEAL BRIEF UNDER 37 C.F.R. § 41.37**

**MAIL STOP APPEAL BRIEF - PATENTS**

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

In accordance with the provisions of 37 C.F.R. § 41.37, Appellant submits the following:

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**I. REAL PARTY IN INTEREST**

The real party in interest is NEC Corporation., the assignee of the present application.  
The Assignment is recorded in the U.S. Patent and Trademark at Reel 012186, Frame 0143.

## **II. RELATED APPEALS AND INTERFERENCES**

Upon information and belief, there are no other prior or pending appeals, interferences, or judicial proceedings known to Appellant, Appellant's representatives or the Assignee that may be related to, be directly affected by, or have a bearing on the Board's decision in this appeal.

### **III. STATUS OF CLAIMS**

Claims 1-5 are pending (*see* Claims Appendix). These claims stand rejected and are the basis for this appeal.

**IV. STATUS OF AMENDMENTS**

No amendment to the claims has been filed after the final rejection of the claims in the June 30, 2005 Office Action.

**V. SUMMARY OF THE CLAIMED SUBJECT MATTER**

Claims 1 and 5 recite exemplary embodiments of a router with a precedence control function and a machine-readable medium for recording a program for actuating a program for a router, respectively. As shown in Figure 1, the router includes means for collecting empty band related information related to an empty band of each route existing between an own router and a communications IP packet (see specification at page 4, lines 7-9). The means for collecting empty band information can be structurally embodied as a computer including a dummy packet generating portion 103, a return time measuring portion 104, and a timer 105 (see specification at page 4, lines 7-9).

The router also includes a route storing portion 107 for storing route determining information including the collected empty band related information, route collecting said empty band related information and precedence of said communications IP packet in a route storing portion, in the event of receiving the communications IP packet from a terminal directly connected to the own router (see specification at page 4, lines 5-7)

Also included is a route specifying portion 108 for finding all of the route determining information having precedence equal to said communications IP packet and a route matching one of the routes available for said communications IP packet and selecting a route having no overlapping with a route used by an other packet with precedence higher than said communications IP packet and the largest empty band among the found route determining information as the route of said communications IP packet, in the event of receiving the

communications IP packet from a terminal directly connected to the own router (see specification at page 4, lines 6-7).



**VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

- A. Claims 1, 2 and 5 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Lin (U.S. Patent No. 6,498,783) in view of Nederlof (U.S. Patent No. 5,590,118).
- B. Claim 3 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Lin in view of Nederlof.
- C. Claim 4 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Lin in view of Nederlof and in further view of Bellovin et al. (U.S. Patent No. 5,870,557).

## **VII. ARGUMENT**

### **A. The October 24, 2005 Office Action Should Have Been Non-Final**

In the June 30, 2005 Office Action, the Examiner provided a new grounds of rejection for claim 2. The Examiner stated that the October 24, 2005 final rejection was proper because Applicant amended the claims in the April 26, 2006 Amendment. Appellants did amend the claims in that amendment, but solely for editorial purposes. Appellants believe that this type of amendment would not necessitate a final rejection in view of the new grounds of rejection. (see MPEP 707.07(a))

### **B. Lin Does Not Disclose a Precedence Feature as Recited**

Regarding claim 1, the Examiner acknowledges that the means for collecting empty band related information related to an empty band of each route existing between own router and a communication IP packet (as recited in claim 1) is not specifically disclosed in Lin.

However, the Examiner argues that Lin does disclose in column 2, lines 21-28, means for collecting information regarding the speed of various routes, which could be used to determine empty band related information. The Examiner also states that Nederlof discloses in column 8, lines 10-11, means for collecting information related to available bandwidth. As such, the Examiner concludes that it would have been obvious to one skilled in the art at the time of the invention to collect empty band information.

Appellants respectfully traverse this rejection. Claim 1 recites, *inter alia*, “selecting a route having no overlapping used by another packet with higher precedence.” The Examiner states that this feature is disclosed by Lin at column 2, lines 40-52. The Examiner also states that

if different classes of service are being offered, the precedence of the packets must be known and stored. However, Lin does not disclose the precedence feature as recited. First, Lin discloses that the assignment of a channel at a data service request is not disclosed in Lin, but rather U.S. Patent No. 5,675,732, and that as such, Lin discloses the apparatus and method for distributing data services (see col. 4, lines 23-30). As such, Lin does not teach route selection and precedence.

Next, in Lin, the users themselves select the bandwidth/route for transmission. This is granted unless there is not specific bandwidth available on that channel (see col. 5, lines 16-21). Thus, precedence of each packet is also not taught by Lin. Nederlof also does not disclose these features of route selection based on precedence. Rather, Nederlof is related to rerouting a data stream previously routed through a switching network that has failed. The failure of a switching network would not suggest the precedence feature of the present invention.

Further, in response to the Examiner's statement in the Response to Arguments section in the June 30, 2005 Office Action, that the service classes of Lin relate to precedence information, Appellants respectfully traverse this argument. The different classes of service in Lin are related to data transmission rates of each channel. Thus, in Lin, there can be a 256kps service in channel 1 and a 64 Kbps service in channel 2 (see col. 2, lines 41-52). In Lin, the users themselves select the bandwidth/route for transmission. This is granted unless there is not specific bandwidth available on that channel (see col. 5, lines 16-21). On the other hand, precedence of a packet, as known in the art, is based on, among other factors, the need for immediacy, such as when communicating moving images and voice communications (see the present specification at page

1, third paragraph). In Lin, a user selecting a bandwidth/route for transmission based on a service level would not know the precedence of another packet by another user (nor is this disclosed), and therefore, there is no consideration in Lin given to overlapping of packets as in the present invention. That is, Lin determines the services available, and provides the bandwidth/route to everyone without regards to precedence. Thus, claim 1 (as well as claim 5 which includes these features) is allowable.

**C. Lin Does Not Disclose or Suggest *Return Times* of Dummy Packets as Claimed.**

Claim 2 recites “wherein said empty band related information is return times of dummy packets.” The Examiner states that this feature is disclosed by Lin, column 2, lines 21-28 (the test message is a dummy packet). However, Lin does not disclose or suggest *return times* of dummy packets as claimed. In the present invention, dummy packets and return dummy packets are used. In Lin, a timestamp is placed on the test message by the bandwidth manager, and compared to the time that the test message is received by the personal computer (see column 2, lines 21-28). There is no suggestion of a return dummy packet, nor therefore, return times of dummy packets. As such, claim 2 is allowable for this feature as well as its dependence on claim 1.

By the new grounds of rejection, the Examiner has inherently acknowledged Appellants prior response that Lin does not disclose or suggest *return times* of dummy packets at col. 1, lines 1-35. Further, Lin itself teaches that the “ping” command is not suitable for the present invention, and that under the methods described in the Lin invention, the time needed for a test message to travel the low speed telephone link *is eliminated* from the computation to measure

the average data transmission rate (see col. 1, lines 55-67). Thus, Lin actually teaches away from the Examiner's proposed combination. Accordingly, claim 2 is allowable in view of the new grounds of rejection.

Claim 3 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Lin in view of Nederlof. Claim 3, inter alia, recites use of a dummy packet and a return dummy packet. The Examiner states that Lin discloses in column 1, lines 26-28 and 35-39, using return dummy packets as a common method of estimating round-trip time in IP networks. Appellants respectfully submit that return dummy packets are not disclosed in Lin for the reasons presented above for claim 2. Claim 3 also recites the "precedence" feature which is neither disclosed nor suggested for the reasons above. Accordingly, claim 3 is allowable based on these features, as well as its dependence on claim 1.

Claim 4 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Lin in view of Nederlof and in further view of Bellovin et al. (U.S. Patent No. 5,870,557). The Examiner acknowledges that the claimed dummy packet generating portion transmitting the dummy packets at each time when a predetermined number of communication IP packets is received from a terminal directly connected to own router is not specifically disclosed in Lin or Nederlof.

However, the Examiner states that Bellovin discloses in column 2, lines 8-10, periodically analyzing the congestion along routes in an IP network. As such, the Examiner concludes that it would have been obvious to one skilled in the art at the time of the invention to transmit the dummy packet and collect congestion information after every N packets. The

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Examiner states that the motivation would be to be able to identify and adjust to traffic changes in the network as they happen over time.

Appellants respectfully submit that claim 4 is allowable at least based on its dependence on claims 1/3, allowable for the reasons described above.

Unless a check is submitted herewith for the fee required under 37 C.F.R. §41.37(a) and 1.17(c), please charge said fee to Deposit Account No. 19-4880.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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**CLAIMS APPENDIX**

CLAIMS 1-5 ON APPEAL:

1. A router with a precedence control function comprising:  
means for collecting empty band related information related to an empty band of each route existing between an own router and a communications IP packet, and for storing route determining information including the collected empty band related information, route collecting said empty band related information and precedence of said communications IP packet in a route storing portion, in the event of receiving the communications IP packet from a terminal directly connected to the own router; and  
a route specifying portion for finding all of the route determining information having precedence equal to said communications IP packet and a route matching one of the routes available for said communications IP packet and selecting a route having no overlapping with a route used by an other packet with precedence higher than said communications IP packet and the largest empty band among the found route determining information as the route of said communications IP packet, in the event of receiving the communications IP packet from a terminal directly connected to the own router.
2. The router with a precedence control function as claimed in claim 1, wherein said empty band related information is a return time of dummy packets.

3. The router with a precedence control function as claimed in claim 1, wherein said means for collecting empty band related information comprises:

a dummy packet generating portion for transmitting a dummy packet requiring a return dummy packet in which each route available for said communications IP packet includes originating time, precedence and a route of said communications IP packet and a last router includes said originating time, precedence and the route, in the event of receiving a communications IP packet from a terminal directly connected to the own router,

a return time measuring portion for calculating return time of the dummy packet based on the time when said return dummy packet is received and an originating time in said return dummy packet, in the event of receiving the return dummy packet and storing the route determining information including said calculated return time, precedence of said return dummy packet and the route of said return dummy packet in said route storing portion.

4. The router with a precedence control function as claimed in claim 3, wherein said dummy packet generating portion has a composition of transmitting the dummy packet at each time when a predetermined number of communication IP packets are received from a terminal directly connected to the own router.

5. A machine-readable recording medium for recording a program for actuating a computer for a router as;



means for collecting empty band related information related to an empty band of each route existing between a computer for an own router and a communications IP packet, and for storing route determining information including the collected empty band related information of each route, route collecting said empty band related information and precedence of said communications IP packet in a route storing portion, in the event of receiving the communications IP packet from a terminal directly connected to the computer for the own router; and

a route specifying portion for finding all of the route determining information having precedence equal to said communications IP packet and a route matching one of the routes available for said communications IP packet and selecting a route having no overlapping with a route used by an other packet with precedence higher than said communications IP packet and the largest empty band among the found route determining information as the route of said communications IP packet, in the event of receiving the communications IP packet from a terminal directly connected to the computer for the own router.

**EVIDENCE APPENDIX:**

None.

**RELATED PROCEEDINGS APPENDIX**

None.